

## **REMARKS**

In the Office Action dated October 12, 2006, the Examiner rejected claims 28-54 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,261,874 to Castle in view of U.S. Patent No. 5,588,959 to Ahmad.

By this Reply, Applicants amend claims 28, 34, 38, 39, 44, 46, 48, 49, and 51. Claims 28-54 are currently pending in this application. No new matter is added by this Reply.

Applicants respectfully traverse the Examiner's rejection of claims 28-54 under 35 U.S.C. § 103(a) as being unpatentable over Castle in view of Ahmad. The combined teachings of Castle and Ahmad do not disclose or suggest each and every limitation of claim 28, for example. The Examiner contends that Castle describes an extracorporeal blood access "comprising at least one blood treatment unit 1, at least one access branch 2 extending between an area where blood is collected from a patient and the treatment unit, at least one peristaltic pump 3, and at least one return branch 4 extending between the treatment unit and an area where the blood is returned to the patient, and at least one control unit 8. . . at least a first sensor 5, [and at] least a second sensor 6" (Office Action at 2-3.) The Examiner concedes, however, that "Castle does not teach a memory unit as claimed." (Office Action at 3.) Applicants agree that Castle lacks a memory as recited in claim 28, however, Applicants submit that Castle also fails to disclose or suggest additional limitations recited in claim 28.

In particular, Castle does not disclose or suggest "at least an arterial pressure sensor" and "at least an angular velocity sensor," as recited in amended claim 28. Sensors 13 and 57, disclosed in Castle, are neither arterial pressure sensors nor angular velocity sensors. In fact, nowhere does Castle suggest sensing arterial pressure or angular velocity in the extracorporeal blood circuit disclosed. Castle also

does not disclose or suggest “at least one control unit, operatively coupled to said arterial pressure sensor, said angular velocity sensor, and to said memory, configured to receive said first and second output signals and to store corresponding measured values of arterial pressure and angular velocity in said memory,” as recited in amended claim 28. Moreover, Castle does not disclose or suggest a control unit configured to execute a control procedure comprising the steps of “calculating an actual flow value by applying said calibration function to the corresponding measured values of arterial pressure and angular velocity measured with said arterial pressure sensor and said angular velocity sensor, comparing said actual flow value with said at least one set flow value, and varying the angular velocity of said at least one peristaltic pump if the difference between the actual flow and the desired flow lies outside a predetermined range,” as recited in amended claim 28.

The Examiner, however, contends that Ahmad “teaches a computer comprising a microprocessor circuit comprising a microprocessor, memory, control and analog-to-digital interface circuits, a temperature measurement and interface circuit . . . and a communication device for the benefit of controlling and/or changing the temperature of the blood returning to the patient (Ahmad col. 4, line 49 through col. 5, line 30).” (Office Action at 3.) The Examiner further asserts that it “would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Castle with a temperature control means for the benefits taught in Ahmad.” (Id.) Applicants disagree, however, because even the combined teachings of Castle and Ahmad fail to disclose or suggest every limitation of amended claim 28. In fact, Ahmad fails to cure the above-mentioned deficiencies of Castle.

In particular, Ahmad fails to disclose or suggest “at least an arterial pressure sensor” and “at least an angular velocity sensor,” as recited in amended claim 28.

Ahmad merely discloses means for measuring temperature and flow rate (Ahmad at col. 5, lines 21-33), but makes no mention of sensing arterial pressure or the angular velocity of a peristaltic pump, as recited in amended claim 28. Ahmad also fails to disclose or suggest “a memory configured to store at least one set flow value of a desired blood flow through said access branch, and a calibration function in accordance with . . . v1, related to the angular velocity of the pump, v2, related to the arterial pressure in the portion of said at least one access branch upstream of the at least one peristaltic pump, and v3, related to an actual flow of blood through said at least one access branch,” as recited in amended claim 28.

Moreover, Ahmad similarly fails to disclose or suggest “at least one control unit, operatively coupled to said arterial pressure sensor, said angular velocity sensor, and to said memory, configured to receive said first and second output signals and to store corresponding measured values of arterial pressure and angular velocity in said memory,” as recited in amended claim 28. Moreover, Castle does not disclose or suggest a control unit configured to execute a control procedure comprising the steps of “calculating an actual flow value by applying said calibration function to the corresponding measured values of arterial pressure and angular velocity measured with said arterial pressure sensor and said angular velocity sensor, comparing said actual flow value with said at least one set flow value, and varying the angular velocity of said at least one peristaltic pump if the difference between the actual flow and the desired flow lies outside a predetermined range,” as recited in amended claim 28.

As discussed above, the combined teachings of Castle and Ahmad do not disclose or suggest each and every limitation of amended claim 28. Accordingly, amended claim 28 is allowable over the cited prior art. Thus, claims 29-54 are allowable due at least to their dependence from allowable amended claim 28.


In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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